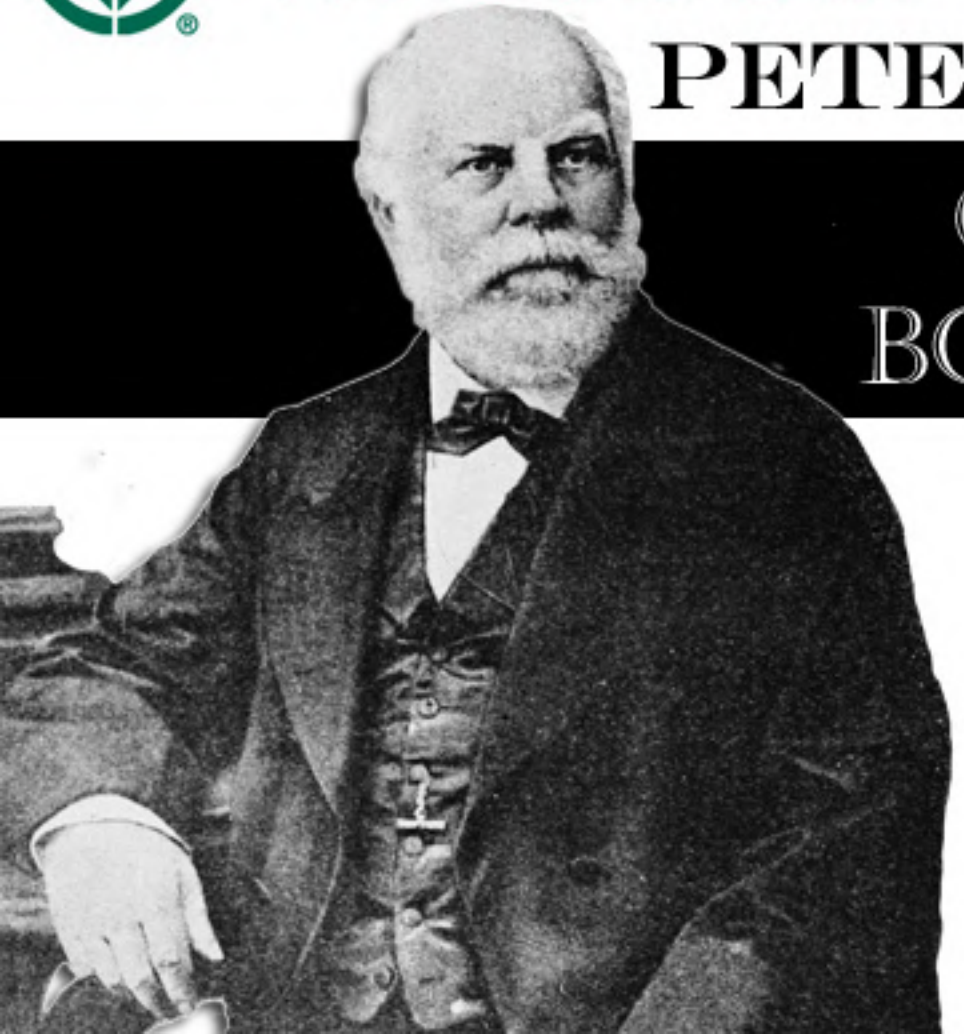
Missouri Botanical Garden

Peter H. Raven Library

George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

Callitriche polymorpha Lehm

Oct 26 1864

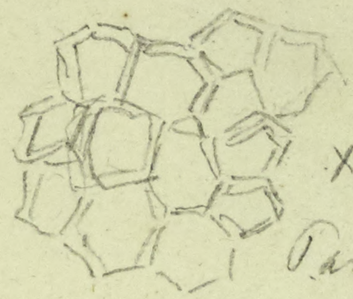
= Hb. Hds Museum, Sine Loco & nomine

933

x 30

x 30

1.0 mm. diam

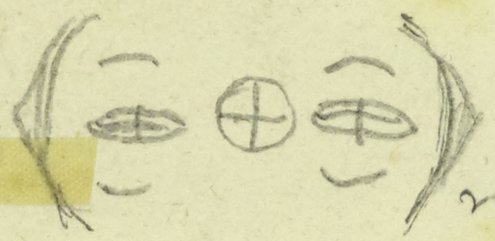


x 150

Parenchymatous
Cont.ing of nucleli

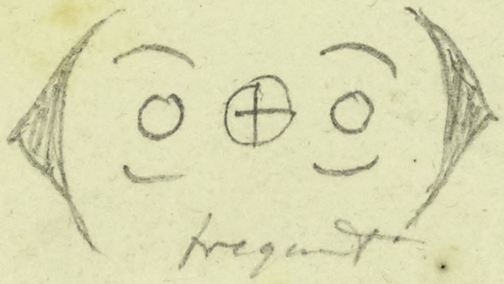
x 10

Some branches female

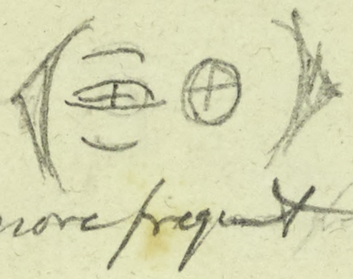


rarer

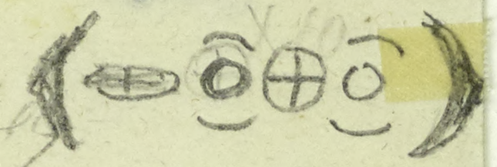
other branches male flowers only



frequent



more frequent



seen once

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

ALEX. LEITCH.

APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

ELÆACRINUS KIRKWOODENSIS, n. sp.

Body very small, subglobose, a little longer than wide, flattened above and below. Basal pieces very gently concave, with their edges on a level with the plane of the under side. Radial pieces (fork pieces) reaching to the base and occupying more than four fifths the entire length of the body, narrow below and widest in the middle, sides gently arched. Interradial pieces subdeltoid, very prominent towards the apex, much longer than wide, obtusely angulated below, acutely angulated above, and notched on either side a short distance below the summit. Pseudo-ambulacral areas extending from base to summit, narrow, deeply impressed; sides nearly parallel; pore pieces amounting to about fifty in each field. A longitudinal fissure or slit extends from the central summit opening downwards, separating the pore pieces of one side from their fellows of the opposite for the distance of about one fifth the length of the field, thence their inner edges are united in the median line to the base. Pseudo-ambulacral spaces lanceolate, sloping gently from their edges to the sutures. Ovarial apertures eight, very minute, situated at the notches of the interradial plates. Anal opening large, circular or very slightly elliptical. The surface markings are not plainly exhibited in any of the specimens I have collected of this species. On several of them I observe, more or less distinctly, irregular coarse rugæ or pittings, which, however, may be due to weathering.

Dimensions.—Length, 0.20 of an inch; width, 0.18.

The *Elæacrinus Kirkwoodensis* is nearly allied to *E.* (*Pentremites*) *melo*, from which it is distinguished by its much smaller size and less deeply excavated base. It also occupies a higher geological position.

Occurs in the St. Louis Limestone (Carboniferous) on the Pacific railroad near Kirkwood, St. Louis county, Missouri.

933A

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Topaz in Utah. By Henry Engelmann.

During my explorations in Utah as Geologist of the Expedition under Capt. J. H. Simpson, Top. Eng'rs. U. S. A., in 1858 and 1859, I observed some remarkably beautiful crystals of Topaz among some detritus of trachytic porphyry. They were perfectly colorless, transparent, sharply developed, and of great lustre. They were all short columnar. The largest of them measured scarcely one third of an inch in the direction of the basal cleavage, which was highly perfect. I observed ten modifications: all crystals exhibited (according to Prof. Rose's designation)

∞c : b : a ,	∞c : b : 2 a ,	c : ∞b : : ∞a 1 ,
4 c : b : ∞a ,	2 c : b : a ;	
most of them also	2 c : b : ∞a ,	c : b : a ;
a few only	2 c : ∞b : a , and	4 (?) c : b : a .

As in none of the crystals were both ends developed, I could not ascertain whether they were hemihedral, as is most common with topaz. The hardness of the mineral is =8. It is infusible before the blowpipe; and when strongly heated is coated with small blisters, but does not show any change of color. It exhibits the reactions of fluorine, alumina, and silex. No tests were made for other elements, nor were the crystals examined in regard to pyro-electricity and polarization of light. They exhibit double refraction quite plainly.

The locality of the mineral is near lat. 39° 40′, long. 113° 30′ west of Greenwich, west of south of Salt Lake, in Thomas' range of mountains, on Capt. Simpson's return trail. Circumstances prevented me from obtaining more than a few crystals, which are now deposited in the collection of the Smithsonian Institute; a few others are also in the hands of members of the party. We were travelling at the time by forced night marches with nearly worn out animals, seeking to gain a spring of water in a distant range of mountains. This desert was then entirely unexplored. I have but little doubt that more interesting materials are to be found at the same point.

The mountains of the former Territory of Utah promise a rich yield to the mineralogist. We know already of gold and silver ores in the east, west and south part of that district; of copper and lead ores in the south, and I have discovered the latter also in the centre of it; of specular iron ores and native sulphur in the Rocky Mountains and near Little Salt Lake; of rock salt in the mountains south-east of Utah Lake; of native alum near Salt Lake; of various other salts in the deserts; and of silicates, composing the granites, porphyries, diorites, trachytes, and lavas, nearly over the whole area.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Callichroma obtusangula

Oct 31 1864

Herb. H. B. Nelson

Lone Rock & Co

Pollen subglobose

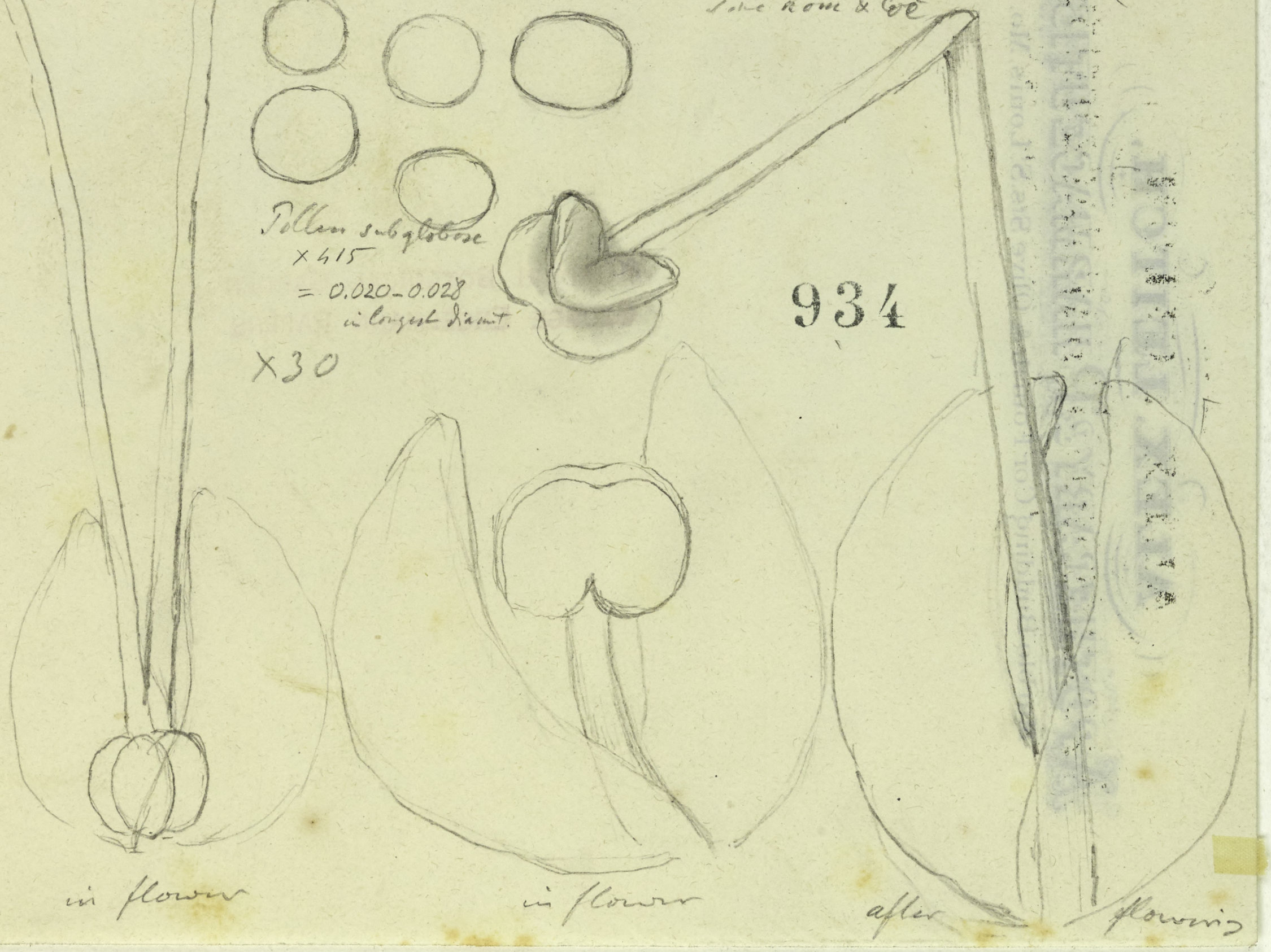
× 415

= 0.020–0.028

in longest diam.

× 30

934



in flower

in flower

after flowering

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Missouri Botanical Garden
George Engelmann Papers

ALEX LEITCH,

APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

Missouri Botanical Garden
copyright reserved

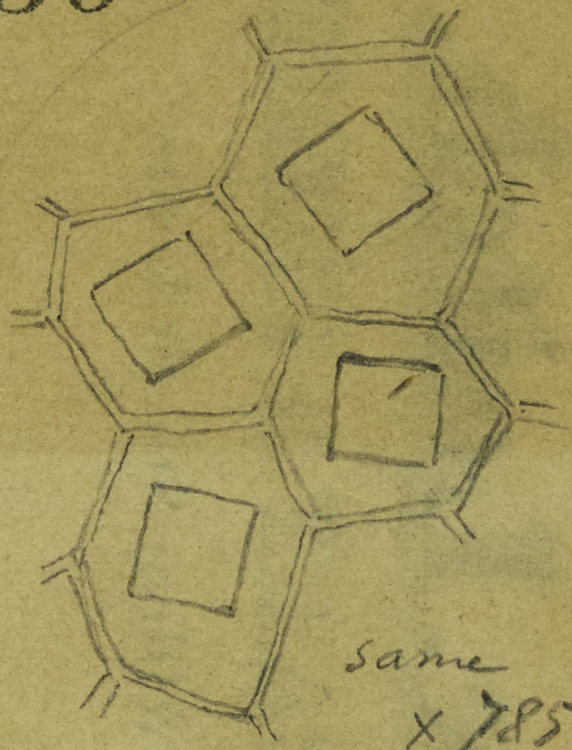
2548 Coll. microcarpa
Cuba

Dec 4 1864

935

X10

seit ×60



same
×785

Sides of Crystal
6-6½ = 0.007
785 = -0.003
mm

3-3½ = 0.005-0.007

same × 540

showing that the clear
transparent space or square
in center of each cell is
a cubic or octahedrons crystal

lens 2-4 mm long
1-1⅔ wide

cellular tissue of parenchy
rounding fruit

× 150

7-8/1500 = 0.005

Size of crystals
say 0.005-0.007 mm

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch.

APOTHECARY & CHEMIST.

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

935 A

ELÆACRINUS KIRKWOODENSIS, n. sp.

Body very small, subglobose, a little longer than wide, flattened above and below. Basal pieces very gently concave, with their edges on a level with the plane of the under side. Radial pieces (fork pieces) reaching to the base and occupying more than four fifths the entire length of the body, narrow below and widest in the middle, sides gently arched. Interradial pieces subdeltoid, very prominent towards the apex, much longer than wide, obtusely angulated below, acutely angulated above, and notched on either side a short distance below the summit. Pseudo-ambulacral areas extending from base to summit, narrow, deeply impressed; sides nearly parallel; pore pieces amounting to about fifty in each field. A longitudinal fissure or slit extends from the central summit opening downwards, separating the pore pieces of one side from their fellows of the opposite for the distance of about one fifth the length of the field, thence their inner edges are united in the median line to the base. Pseudo-ambulacral spaces lanceolate, sloping gently from their edges to the sutures. Ovarial apertures eight, very minute, situated at the notches of the interradial plates. Anal opening large, circular or very slightly elliptical. The surface markings are not plainly exhibited in any of the specimens I have collected of this species. On several of them I observe, more or less distinctly, irregular coarse rugæ or pittings, which, however, may be due to weathering.

Dimensions.—Length, 0.20 of an inch; width, 0.18.

The *Elæacrinus Kirkwoodensis* is nearly allied to *E.* (*Pentremites*) *melo*, from which it is distinguished by its much smaller size and less deeply excavated base. It also occupies a higher geological position.

Occurs in the St. Louis Limestone (Carboniferous) on the Pacific railroad near Kirkwood, St. Louis county, Missouri.

copyright reserved
MISSOURI BOTANICAL GARDEN

Topaz in Utah. By Henry Engelmann.

During my explorations in Utah as Geologist of the Expedition under Capt. J. H. Simpson, Top. Eng'rs. U. S. A., in 1858 and 1859, I observed some remarkably beautiful crystals of Topaz among some detritus of trachytic porphyry. They were perfectly colorless, transparent, sharply developed, and of great lustre. They were all short columnar. The largest of them measured scarcely one third of an inch in the direction of the basal cleavage, which was highly perfect. I observed ten modifications: all crystals exhibited (according to Prof. Rose's designation)

∞ c : b : a ,	∞ c : b : 2 a ,	c : ∞ b : : ∞ a 1 ,
4 c : b : ∞ a ,	2 c : b : a ;	
most of them also	2 c : b : ∞ a ,	c : b : a ;
a few only	2 c : ∞ b : a , and	4 (?) c : b : a .

As in none of the crystals were both ends developed, I could not ascertain whether they were hemihedral, as is most common with topaz. The hardness of the mineral is =8. It is infusible before the blowpipe; and when strongly heat ed is coated with small blisters, but does not show any change of color. It exhibits the reactions of fluorine, alumina, and silex. No tests were made for other elements, nor were the crystals examined in regard to pyro-electricity and polarization of light. They exhibit double refraction quite plainly.

The locality of the mineral is near lat. 39° 40′, long. 113° 30′ west of Greenwich, west of south of Salt Lake, in Thomas' range of mountains, on Capt. Simpson's return trail. Circumstances prevented me from obtaining more than a few crystals, which are now deposited in the collection of the Smithsonian Institute; a few others are also in the hands of members of the party. We were travelling at the time by forced night marches with nearly worn out animals, seeking to gain a spring of water in a distant range of mountains. This desert was then entirely unexplored. I have but little doubt that more interesting materials are to be found at the same point.

The mountains of the former Territory of Utah promise a rich yield to the mineralogist. We know already of gold and silver ores in the east, west and south part of that district; of copper and lead ores in the south, and I have discovered the latter also in the centre of it; of specular iron ores and native sulphur in the Rocky Mountains and near Little Salt Lake; of rock salt in the mountains south-east of Utah Lake; of native alum near Salt Lake; of various other salts in the deserts; and of silicates, composing the granites, porphyries, diorites, trachytes, and lavas, nearly over the whole area.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

2548 Callitriche minor var
Wright Cuba

936

Nov 26 1860

×30

×30

×60

×60

×60

$\frac{12 \times 13}{30}$ = 0.4 – 0.4 mm
0.40 – 0.43 mm

& $\frac{12 \times 12}{30}$

$\frac{25 \times 28}{60}$ = 0.41 × 0.45 mm

Pollen

$\frac{5 \times 6}{415}$ = 0.012 × 0.014 m.m

×150

cells like white blisters, sunk in

Flower

×30

$\frac{6}{415}$ = 0.014
– 0.015 mm

0.018
mm

Pollen globose
S. subglobose

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST.

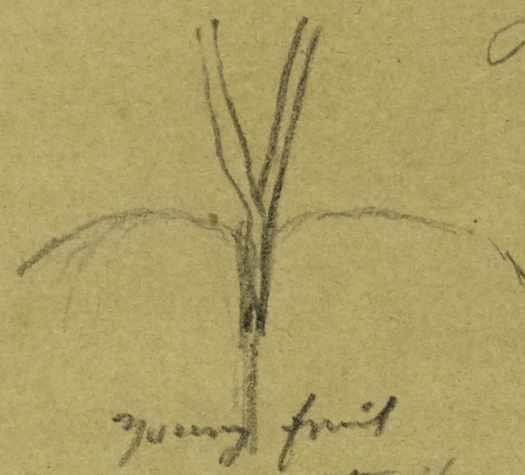
Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

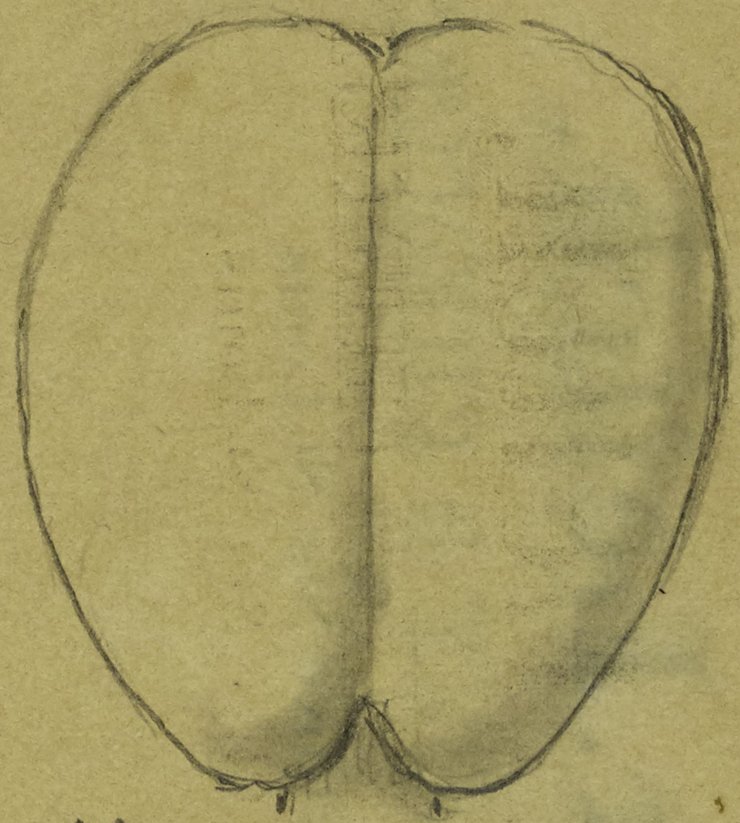
Calceolaria perfoliata Nov 10-29-1964

Bolivia

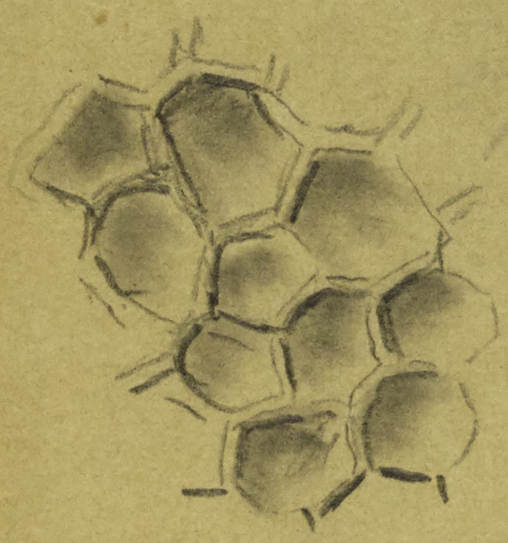


young fruit with fragments of erect styles

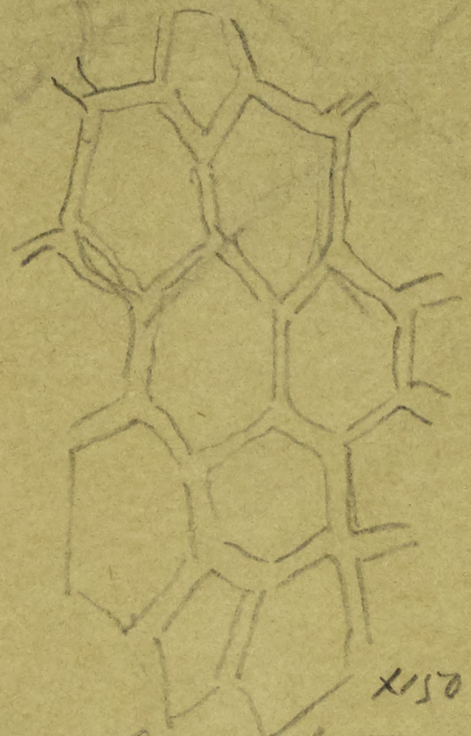
$\frac{39 \times 39}{30} = 1.3 \times 1.3$ mm



$\frac{40 \times 44}{30} = 1.3 \times 15$ mm



X 150
Surface of fruit



X 150

937

Cellular tissue of parenchyma covers fruit.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

937A

chiefly derived from the destruction of Cretaceous strata, and in places abound in fossil bones and plants, usually in a fine state of preservation. The bones have been usually found in excavations for wells, at depths varying from twenty to sixty feet below the surface, and consist of genera closely allied to, or identical with *Titanotherium*, *Rhinoceros*, *Equus*, and *Crocodilus*. Among the plants are several species of palms, a fine collection of which has been made by Dr. Gideon Lincecum, of Long Point, Washington Co., and by him presented to the State cabinet.

The Miocene beds are surmounted at some localities, as at Hidalgo Falls, with a pebbly deposit cemented with ferruginous matter into a coarse pudding-stone or conglomerate. This deposit has yielded in more or less abundance the bones of *Mastodon*, *Elephas*, *Megalonyx*, *Equus* (*E. fossilis*), *Crocodilus*, and *Testudo*.

The collections of the Texas Survey are rapidly increasing in all the departments. The series of Cretaceous and Tertiary fossils are already very extensive, and when properly studied will throw much light on some disputed points in the Geology of Texas and New Mexico.

Donations to the library were received as follows:

Bull. Amer. Ethnolog. Soc., and Report on the Huacas or Ancient Graveyards of Chiriqui, read before the Ethnolog. Soc. by J. King Merrit, M.D., N. York, 1860,—*from the Ethnolog. Soc.;* Bull. de la Soc. Imp. zoolog. d'Acclimation, Paris, No. 9, Sept. 1860, *from the Society;* Sitzungsberichte der K. K. Akad. der Wissensch, Wien, Nos. 3–5, 7–8, 10, Band XXXIV.–XL., Jan. to Ap. 1860, *from the Imperial Academy;* Jahrb. der K. K. Geol. Reichs., Wien, 1859, X. Jahrg., Nos. 3–4, *from the Imperial Society;* Mem. Lit. & Philos. Soc. of Machester, Eng., 2d Ser., Vol. XV., Pt. 2, 1860,—Proc. of same, 1858–9, Nos. 1–16, and 1859–60, Nos. 1–14, *from the Society;* Geolog. Uebersicht der Bergbaue der Oestr. Monarchie von Franz Ritter von Hauer u. Franz Fœtterle mit einem Vorworte von Wilhelm Haidinger, Wien, 1855,— Bericht, über die erste Allgemeine Versammlung von Berg und Hüttenmännern zu Wien, (10 bis 15 Mai, 1858) Wien, 1859,—*from Dr. Franz Fœtterle;* 7–8 Bericht der Oberhessischen Gesellsch für Natur. und Heilkunde, Giessen, 1859, *from the Society;* Atti dell I. R. Istit. Veneto, Tomo V., Serie III., 1–7, 1859-60, *from the Institute;* Verhand. K. K. zool.-bot. Gesellsch. Wien, 1859, IX. Band, *from the Society;* Archiv. der Ver. d. Freunde der Naturgeschichte in Mecklenburg, 14 Jahrg., Neubrandenburg, 1860, *from the Society;* Mittheil. aus dem Osterlande, XV. Band, Heft 1–2, 1860, Altenburg, *from the Society;* Ueber die Wärme-Entwicklung in der Pflanzen, deren Gefrieren und die Schutzmittel gegen dasselbe, von H. R. Goeppert, Breslau, 1830,—Uber die Flora der Silur. Devon. und unteren Kohlen Form. oder des sogenannten Uebergangs-Gebirges, von Göppert, Dec. 1859, *from Prof. von Göppert;* Sitzungsb. der Dorpater Naturforsch. Gesel., 1853-6, Dorpat, *from the Society;* Nachrichten von der Georg. August. Univ. u. d. Königl. Gesellsch. d. Wiss. zu Gœttingen, 1859, No. 1–20, *from the Royal Society;* Verhand. u. Mittheil. des Siebenbergischen Vereins für Nat. zu Hermanstadt, Jahrg. X., No. 7–12, 1859, *from the Society;* Ueber die Wohnsitze der Brachiopoden, von Prof. Ed. Suess, Wien, 1860, *from the Author;* Annual Rep. of the Leeds Phil. & Lit. Soc. for 1859-60,—Proc. Geol. & Polytech. Soc. of the West Riding of Yorkshire for 1859, Leeds, 1860,—The Physical Condition of the People in its bearing upon their Social and Moral Welfare, by the Rt. Rev. R. Bickersteth, Leeds, 1860,—Sensorial Vision, by Sir J. F. W. Herschel, Bart., Leeds, 1858, *from the Society;* Archiv. für die Naturkunde, Ser. I. Bd. I., Lf. 1–3, Bd. II. Lf. 1–2, Ser. II. Bd. I. Lf. 1–5, 1854-59, Dorpat, *from the Dorpater Naturforsch. Gesellsch.;* Jahresbericht der Naturf. Gesellsch. in Emden, 1859, Kleine Schriften VI.–VII., 1860, *from the Society;* Mém. de l'Académie Imp. des Sciences de St. Petersbourg, 7e. Ser., T. II., No. 1–3, 1859,—Bulletin, T. I., Feuilles, 7–36, *from the Imperial Academy;* Proc. of the Histor. Soc. of New York, Oct. 1853,—Ruins of Terrampua, by E. G. Squier,—Memoir on the European Civilization of

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

America in Ante-historic Times, by Adolph Zestermann of Leipzic, with Critical Observations by E. G. Squier, 1851,—Volcanoes of Cent. America, by E. G. Squier, 1850, *from the Author;* Canad. Journal of Industry, Science and Art, Sept. 1860, *from the Canadian Institute;* Notes d'un Voyage dans l'Amérique Centrale,—Lettres à M. Alfred Maury, Bibliot. de l'Inst. (Ext. des Nouvelles Annales des Voyages, Paris, Août, 1855,—Lettre de M. E. G. Squier, à propos de la lettre de M. Brasseur de Bourbourg, à M. Alf. Maury, Paris, 1855, from E. G. Squier, Esq.; Proc. Acad. Nat. Sci. Philad., Sept. 1860, *from the Academy;* Observations upon the Form of the Occiput in the Various Races of Men, by J. Aitken Meigs, Philad. 1860, *from the Author;* Proc. Boston Society Nat. Hist., Sep. & Oct., 1860, *from the Society;* Original Communications from the N. Orleans Med. & Surg. Journal, Nov. 1860, *from Bennett Dowler, M.D.;* Bull. de la Soc. Imp. zool. d'Acclim. Paris, *from the Society.*

Mr. Holmes presented, in the name of A. F. Bandelier, a series of fossils from Illinois, and Mr. Reid specimens of asphaltum, petroleum, and fossils, from Canada West.

The committee to whom was referred the paper of Prof. Swallow on New Fossils from the Carboniferous and Devonian Rocks of Missouri, reported the same for publication in the Transactions.

November 19, 1860.

The President, Dr. Prout, in the chair.

Eleven members present.

Letters were read from the Essex Institute. Salem, Mass., Nov. 6, 1860, acknowledging receipt of No. 4 of Transactions; Sec. of the Smithson. Inst. Wash., D. C., Nov. 1860, enclosing list of shells presented to the Academy by the Smithsonian Institution; Soc. Roy. des Sciences, Upsal; Société Imperiale des Sciences Naturelles de Cherbourg, transmitting publications; Naturk. Verein in Augsburg, Aug. 27, 1860, —Nat. Hist. Society of Northumberland, Durham and Newcastle-upon-Tyne, Oct. 6, 1860, acknowledging receipt of Transactions; Lem. T. Wells, Cincinnati, O., acknowledging notice of his election as a Corresponding Member of the Academy.

The following donations to the library were received:

The Rock and Coal Oils of Ohio, by J. S. Newberry, M.D., 1829, *from the Author;* Der Zool. Garten, Organ der Zool. Gesellsch. in Frankfurt a M., Herausg. von Dr. D. F. Weinland, No. 7–12, 1860, *from the Editor;* N. Orl. Med. & Surg. Jour., No. 6, Nov. 1860, *from the Editors;* Journal Frank. Inst., No. 5, Nov. 1860, *from the Institute;* Nova Acta, Roy. Soc. Sci. Uspal Ser. III., Vol. I. & II.,—Arsskrift of same, 1, *from the Royal Society;* Dritter Jahres-bericht des naturf. Vereins in Passau, for 1859, 1860, *from the Society;* Mém. Soc. Imp. Sci. Nat. Cherbourg, T. VI. & VII., 1858-9, *from the Society;* Tab. Method. et Descrip. des Mollusques terrestres et d'eau douce de l'Agenais, par M. J. B. Gassies, Paris, 1849,—Catalog. raisonné des Mollusques terrestres et d'eau douce de la Gironde, par M. J. B. Gassies, Paris, 1859, *from the Author;* XIII. Jahresb. des Naturhist. Vereins in Augsburg, 1860, *from the Society;* Actes de la Société Linn. de Bordeaux, Tome XXII., 3e. Ser., T. II., Paris, 1860, *from the Society;* List of Shells collected in the Grand River Valley, Michigan, by A. O. Currier, 1860, *from the Author;* Amerika, Geograph. und Natur-

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

937 B

gesch. von Brückner, *from C. Witter*; Med. Statistics of U. S. Army during the years 1855–59, *from Dr. Leigh.* Dr. Engelmann laid on the table a Latin translation of his monograph on *Cuscuta* (Trans. Acad. Sci. St. Louis, Vol. I., p. 453,) *presented* by the translator, Dr. Acherson, of Berlin.

Mr. Holmes presented, in the name of Mr. Bandelier, several slabs of coal shale with fossil plants from Illinois.

Prof. Holtzman, of Heidelberg, Germ., was elected a Corresponding Member.

December 3, 1860.

The President, Dr. PROUT, in the chair.

Nine members present.

Letters were read from Wm. W. Jeffries, dated West Chester, Penn., proposing exchange of minerals, and from Prof. E. W. Hilgard, State Geologist, Oxford, Miss., acknowledging his election as a Corresponding Member.

Additions to the library were received as follows:

Observations upon the Geology and Palæontology of Burlington, Iowa, and its vicinity, by Chas. A. White, 1860, *from the Author;* Report on the Economical Geology of the Route of the Ashtabula and New Lisbon Railroad,—Catalogue of Flowering Plants and Ferns of Ohio, by J. S. Newberry, M. D., *from the Author;* Amer. Jour. Sci. & Arts, Nov. 1860, *purchased.*

Dr. Prout presented, in the name of S. S. Lyon, Esq., a collection of Devonian and Upper Silurian fossils from the Falls of the Ohio and vicinity.

December 18, 1860.

The President, Dr. PROUT, in the chair.

Seven members present.

Letters were read from L'Acad. Roy. des Sciences de Lisbonne, Mai, 1860, transmitting publications; and from Prof. Wm. Haidinger, dated Vienna, Aug. 1, 1860.

Donations to the library were received from the following Societies:

Bull. Soc. Imp. zool. d'Acclim. Paris, Oct. 1860,—Proc. Acad. Nat. Sci. Phil., Oct. 1860,—Mem. Acad. Real Sci. Lisboa, Classe Math. Phys. e N t., 2d Ser., T. I., Pt. 1, 1843,—Nov. Ser., T. I. p. 1–2, T. II. p. 1, 185 –7, *from the Royal Academy;* Neuere Nachrichten über Meteoriten, namentlich die von Bokkeveld, New Concord, Trenzano; die Meteoreisen von N braska, Brazos, Oregon, von W. Haidinger, July, 1860,—Neuere Untersuch ungen über die Bestandtheile des Meteorsteines von Copland, schre ben von R. Wöhler an W. Haidinger, July, 1860,—Die Calcutta

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Meteoriten von Shalka, Futtehpore, Pegu, Assam, und Segowlee in dem K. K. Hof. Min.-Cab. von W. Haidinger,—Der Meteorit von Shalka in Bancoorah u. der Piddingtonit, von W. Haidinger, *from the Author ;* Jour. Frank. Inst., Dec. 1860, *from the Institute ;* Canadian Journal, Nov. 1860, *from the Canadian Inst ;* Proc. Acad. Nat. Sci. Philad., Nov. 1860, *from the Academy ;* Jour. of Education, Nos. 10 & 11, Montreal, 1860, *from Capt. Huguet-Latour.*

Dr. E. R. Morerod, of Silver Top, Tenn., was elected a Corresponding Member.

January 7, 1861.

Vice-President ENGELMANN in the chair.

Thirteen members present.

Letters were read from I. A. Lapham, Milwaukie, Wis., Dec. 17, 1860, acknowledging receipt of Transactions; Smithson. Inst. Washington, D. C., Dec. 3, 1860, transmitting publications; E. R. Morerod, M.D., Silver Top, Tenn., acknowledging receipt of notice of his election as a Corresponding Member.

The following letter was read from Lieut. G. K. Warren, dated West Point, Dec. 19, 1860:

NATHANIEL HOLMES, A.M.,
Cor. Sec. Acad. Science St. Louis.

Dear Sir: In looking carefully over the table given by Dr. Engelmann, p. 666, Vol. I., No. 4, calculated from Nicollet's data, I see one rather important error, and that is in taking the low water elevation of the Mississippi at New Orleans at 10 feet above the Gulf. *This is the level of the pavement in front of the Cathedral.* A note in Mr. Nicollet's table, taken from Albert Stein, gives this low water elevation 5-10ths of a foot, and consequently a slope of only about 5-1000ths of a foot thence to the mouth; and not 9-10ths, as in Dr. Engelmann's table. This very slight fall in so long a distance could scarcely be credited were it not a well established fact. Respectfully, your ob't serv't,

G. K. WARREN, Lieut. Top. Eng'rs.

The following publications were received:

Beobacht. u. Betracht. über *Scotophis Lindheimeri, S. Alleghaniensis* und andere Schlangen von Dr. Benno Matthes, Dresden, *from the Author ;* Smithsonian Report for 1859, *from the Smithson. Inst.;* Catalogue of Lepidoptera of North America, prepared for the Smithson. Instit. by John G. Morris, Washington, 1860,—Catalogue of Diptera of North America, prepared for Smithson. Inst. by R. Osten-Sacken, Washington, 1860,—Catalogue of Publications of Societies (Foreign Works) in the Library of the Smithson. Inst. Washington, 1859,—Instructions in reference to Nests and Eggs of North American Birds,—Directions for Collecting and Preserving Specimens in Natural History, *from the Smithson. Inst.;* Acad. Roy. Sci. à Amsterdam, Verlsagen en Med. Afd. Naturk. Dl. X. Letter k. Dl. V., 1860,—Catalogus Dl. I. St. 2,—Jaarboek, 1859, *from the Royal Academy;* Erster Bericht des Offenbacher Vereins für Naturk. 1860, *from the Society;* Ergebnisse Meteorol. Beob.—Sternschuppen und Feuerkugeln von Dr. Rudolph Wolf—Jahresbericht über die Konigliche Blinden-Anstalt zu Dresden, 1859,—Nachrichten von dem Taubstummen-Inst. zu

MISSOURI BOTANICAL GARDEN

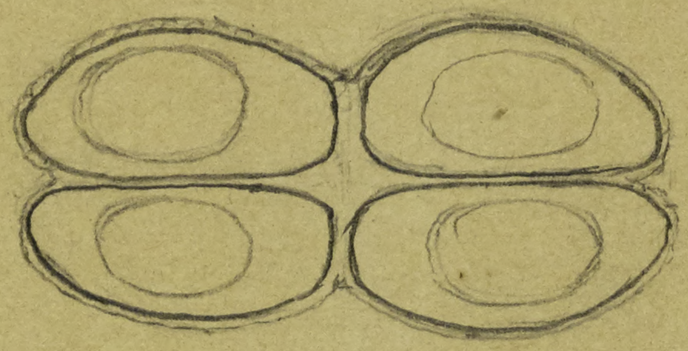
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Call. perfoliata

29 Nov 1864

×30

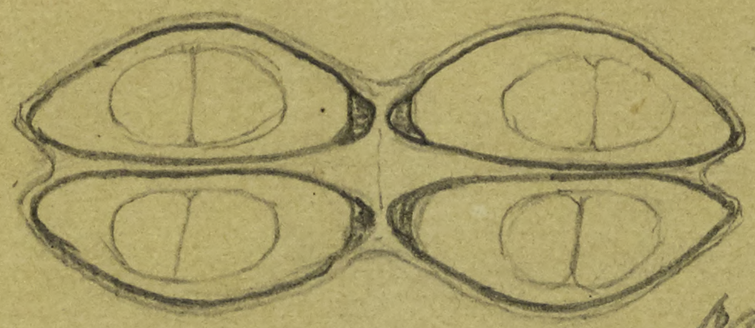
938



Section soaked

through

lower



through

upper

part of fruit

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch.

APOTHECARY & CHEMIST.

Cor. 4th & Olive Sts., St. Louis.

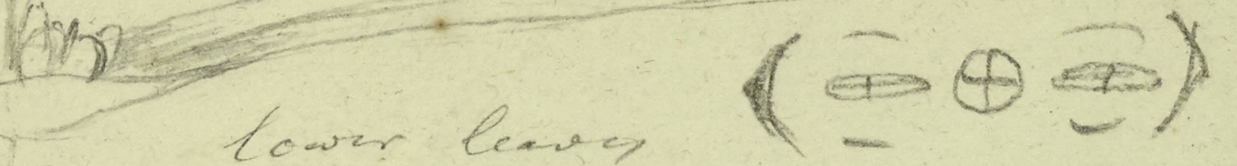
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

All. parviflora
Bolivia

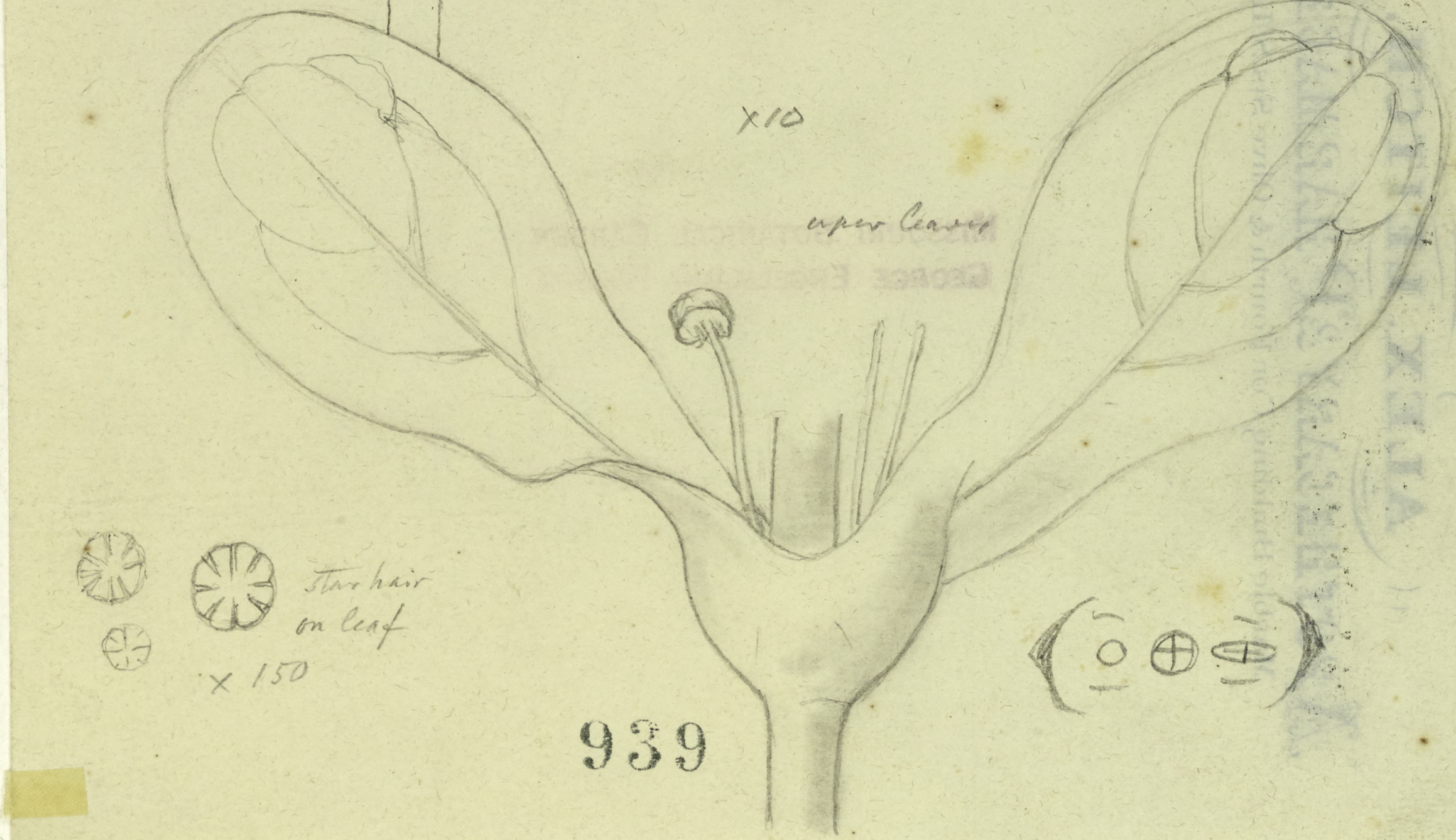
Nov 11 1864
-13

lower leaves



x10

upper leaves



star hair
on leaf

x 150

939

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

ALEX. LEITCH,

APOTHECARY & PHARMACEUTIST,

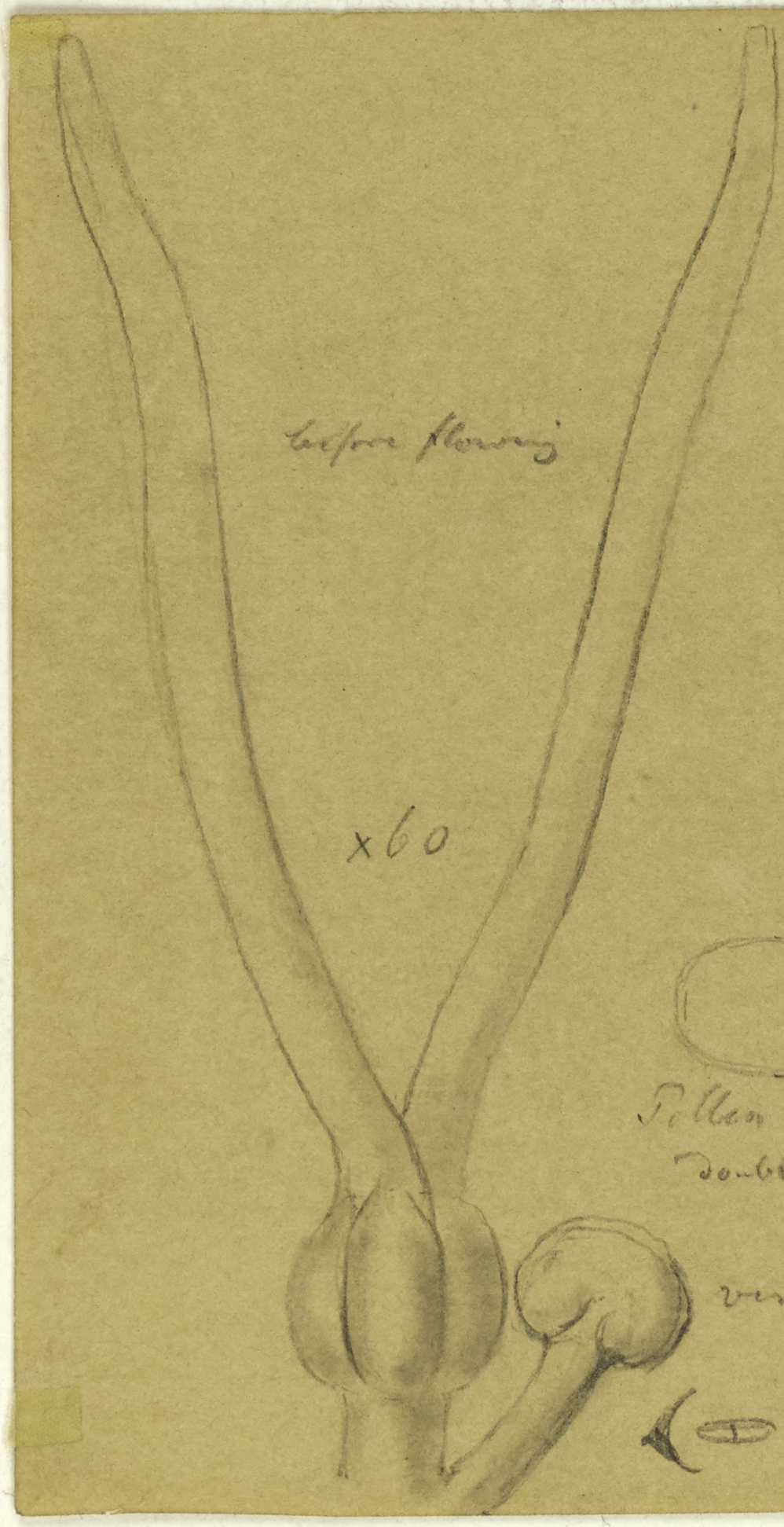
Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

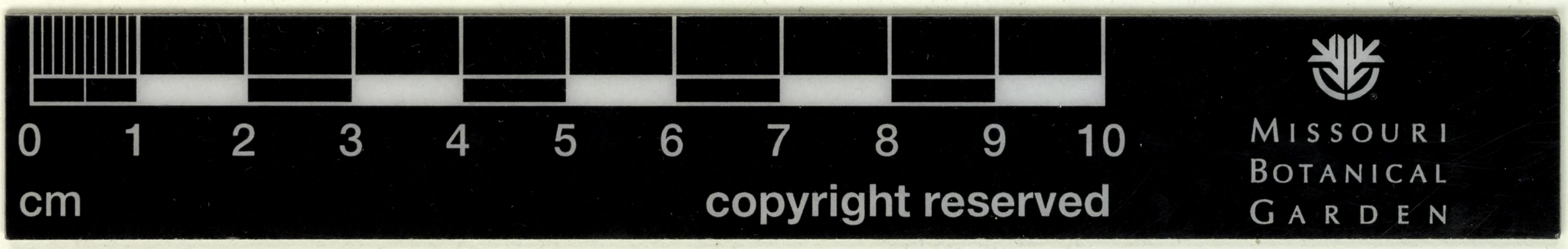
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

Cecelmitra perfoliata
Bolivia
Nov 10 1864

940





Alex. Leitch,

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

Callitriche hg 6 Nov 10 1864

Bolivia

(Black leaves – perfect

in flower

× 30

× 30

before anthesis

Pollen

× 415

Pollen D. 025 – 0.028 mm

Styles 3 – 3½ m m long

bracts small

× 30

bracts

deflorate stamen

941

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST.

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

Jan 27 1864

Coll: perfoliata ?
Bolivia, mixed with 1496
Mandon

942

large leaved
form

X 30

X 415

Pollen globose

$\frac{10-11}{415}$ mm = 0.024 – 0.027 mm

X 10

male flower
just open

X 30

stellate hairs X 150

fem. flower

copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST.

Cor. 4th & Olive Sts., St. Louis.

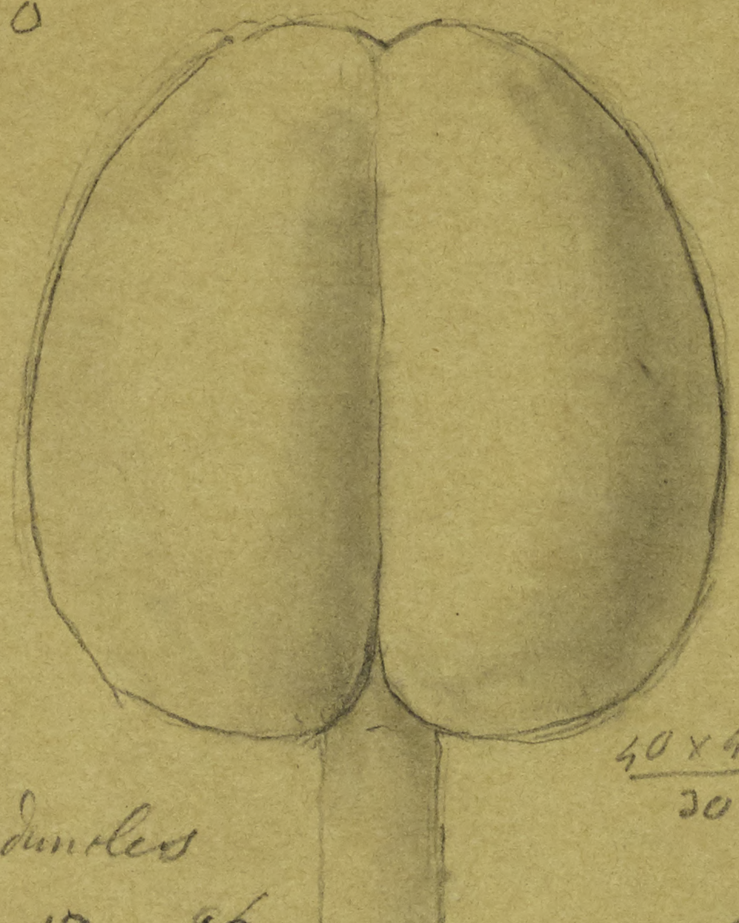
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
MISSOURI BOTANICAL GARDEN
copyright reserved

Callitriche heterophylla Nov 8–11.1864

Andes of Bolivia, J. Mandon Leg.
No 1496

×30



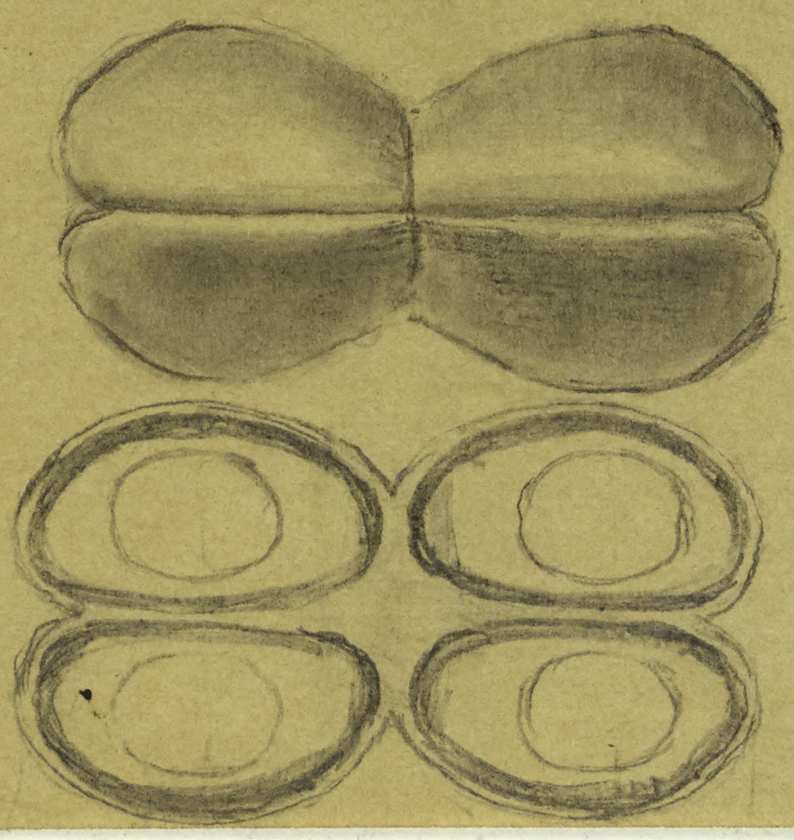
40×41
30 = 1.3 – 1.4 mm

×150
Surface of both sepals & irregularly pitted, parenchymatous & very thick.

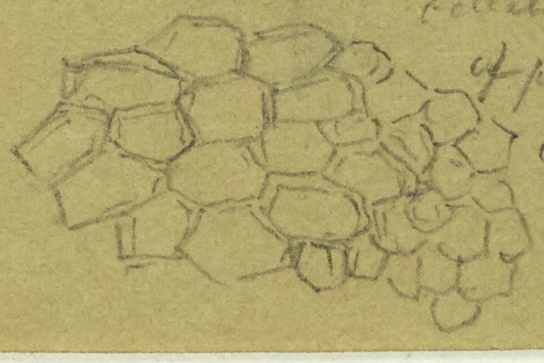
943

Pedunculus
10–12 or 16 mm long –23
or scarcely any
only 2 mm

Top



Lat.



cellular tissue of pericarp covering fruit
×150

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

All. heterophylla v. reflexa Nov 12 1864

944

x10

opposite
Dorsum ?

x10

stigma
broken off

very young
fruit
x30

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

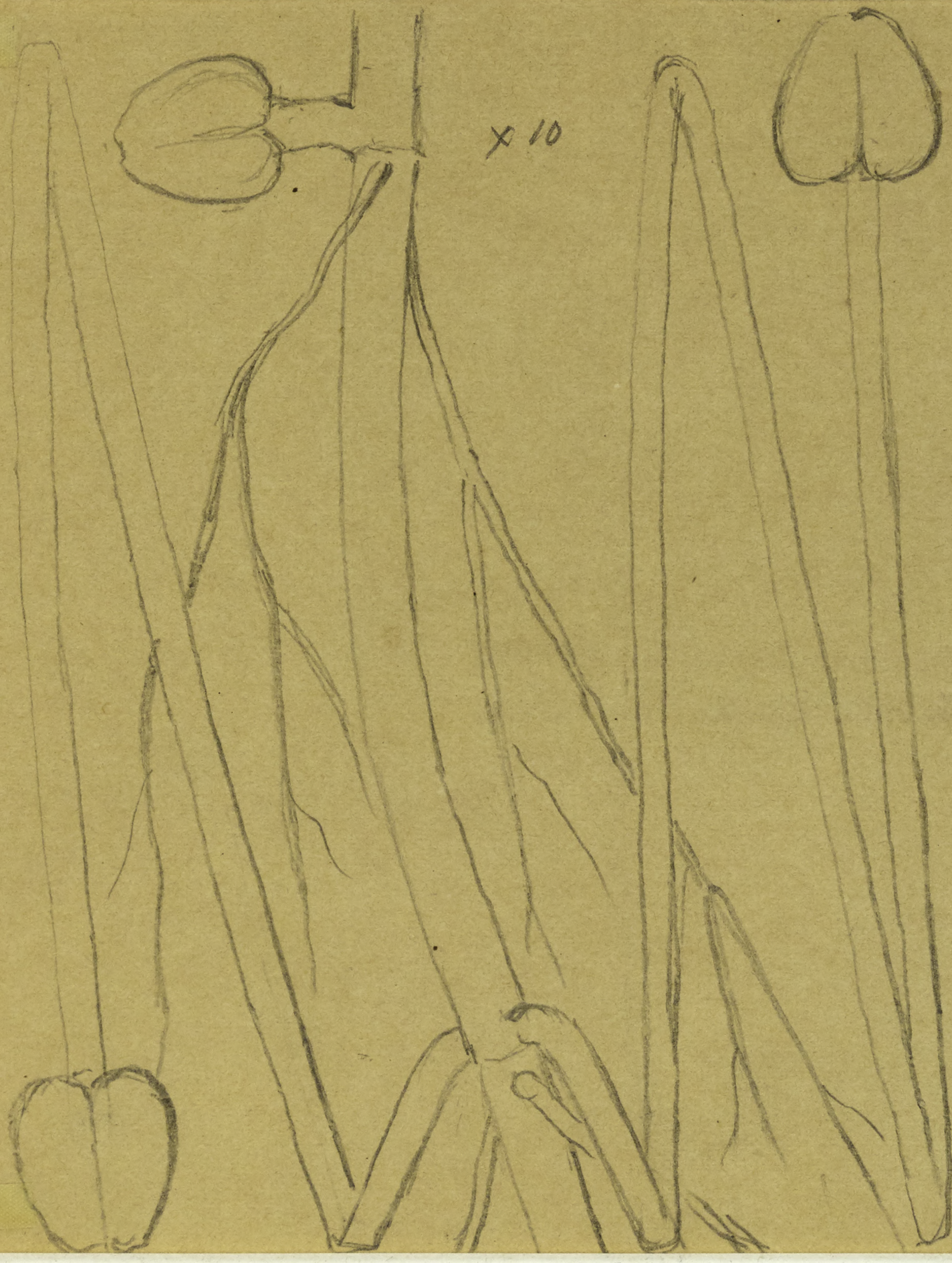
APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

Nov 14 1866



945

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

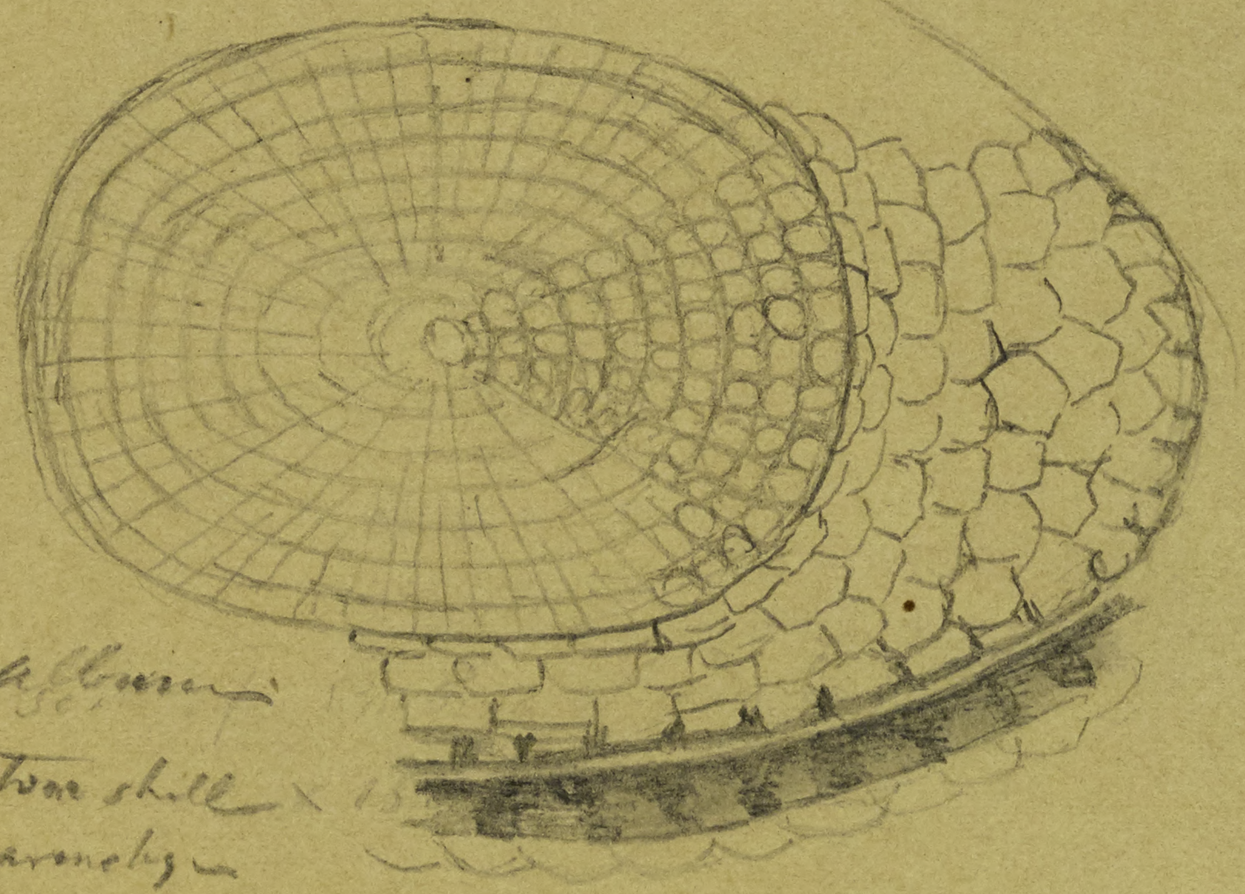
cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

Coll. Heteropoda

Nov 11 1864

946

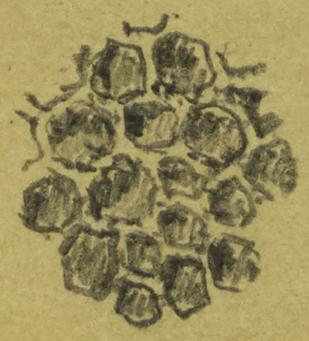
X150



radula of Carinaria

a fragment of shell of Carinaria

Dec 2d 1864



Y150

reticulated surface of rock, after removal of thick Carinaria

Y150

surface of dry Carinaria — myself — very indistinctly retired

Alex. Leitch,

APOTHECARY & CHEMIST.

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS.

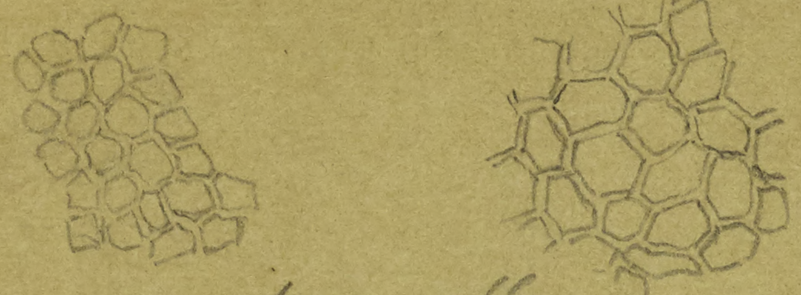
cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

Call. helianthoides ?

sessilis

Bolivia

Mandon



surface cells ×150

Nov 30 1864

very young fruit

12 stamens

12 to 35 mm long in these specimens

×10

almost ripe fruit

947

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Alex. Leitch,

APOTHECARY & CHEMIST.

Cor. 4th & Olive Sts., St. Louis.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 cm 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN